Remarks

In the Office Action, claims 22, 44-45 and 82 were withdrawn from consideration as drawn to a non-elected invention. These claims were canceled above.

The Examiner maintained the rejections made in the earlier Office Action.

Claim 83 was again rejected under 35 USC 102(b) as anticipated by, or in the alternative, under 35 USC 103(a) as obvious over Pitcher et al. The Examiner contends that Pitcher et al. describes using an Eppendorf tube for centrifugation, and that an Eppendorf tube has "all properties of the centrifuge tube described in claim 83 and could be considered as an ultracentrifuge tube."

Claims 83-84 were again rejected under 35 USC 103(a) as unpatentable over Samadpour et al. in view of Pitcher et al.

Claim 92 was again rejected under 35 USC 103(a) as unpatentable over Pitcher et al., in view of Lanoil et al. and Burgoune.

On page 9 of the Office Action, the Examiner stated that he was unpersuaded by Applicants' earlier arguments "because the claims do not define what kind of centrifuge tube can be considered as an ultracentrifuge tube and what range of centrifugation speed can be considered as ultracentrifugation."

The Examiner further stated that "the features upon which applicant relies . . are not recited in the rejected claim(s)."

The Examiner's rejections are traversed for the following reasons.

The claim language "ultracentrifuge tube" and "ultracentrifuging said sample in said ultracentrifuge tube" is readily recognized in the art as pertaining to a type of centrifugation that is different from standard centrifugation (in which an Eppendorf tube is typically used). For example, g-forces permitted for rotors used in Beckman-brand ultracentrifuge devices range from 53,900g to over 600,000g. (Exhibit 1, Document PL-174S) In contrast, the g-forces permitted for rotors used in a standard high-speed centrifuge device (which is not an ultracentrifuge device) range from 29g to about 50,000g. (Exhibit 2, Beckman Chart) A comparison of the two exhibits reveals significantly different g-force and rpm ranges for the two types of devices, as follows:

ULTRACENTRIFUGE: 53,900g - 602,000g @ 19,000-80,000

rpm

STANDARD CENTRIFUGING: 29g to 50,400g @ 500-21,000

 ${\tt rpm}$

Thus, when Applicants' claims are properly interpreted in

light of the specification (which is consistent with the relevant art - see, for example, page 10, line 25 - "SW41 Ti (Beckman) rotor" and Example 1 - "35,000 rpm"), the claim terms "ultracentrifuge tube" and "ultracentrifuging said sample in said ultracentrifuge tube" are directed to those centrifugation devices (ultracentrifugation devices, that is) which operate at g-forces and rpm ranges applicable only to ultracentrifugation. No limitations from the specification need be read into the claims, as the Examiner suggested, to distinguish the claimed invention from Pitcher et al.

In contrast, Eppendorf tubes (as the Examiner contends are used by Pitcher et al. for centrifugation) are generally subjected to g-force and rpm levels well below those used for ultracentrifugation, as addressed above. For example, Exhibit 3, which is an advertisement for centrifuges which use Eppendorf tubes, reveals that the maximum g-force and rpm levels produced by such centifuges is about 21,000g and 14,000 rpm, respectively. Indeed, plastic tubes (such as Eppendorf tubes) typically used for standard centrifugation would collapse or, at the very least, become significantly deformed by the forces generated by an ultracentrifuge device.

For the above reasons, the claims are patentable over Pitcher et al. alone or in combination with the other cited

references. Specifically, Pitcher et al. does not teach or suggest using the "ultracentrifugation" step and tube as recited in Applicants' claims. Additionally, the remaining references fail to compensate for the deficiencies of Pitcher et al. Accordingly, Applicants ask that the claim rejections be withdrawn.

In view of the foregoing, the present application is in condition for allowance. Reconsideration and favorable action are earnestly solicited.

Respectfully submitted,

Mchael G. Sullivan

Attorney for Applicants Registration No. 35,377

ROTHWELL, FIGG, ERNST & MANBECK, p.c.

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Washington, D.C. 20005 Telephone (202) 783-6040

141.amd2



EXHIBIT 1

Rotors, Tubes & Accessories For Beckman Preparative Ultracentrifuges

Beckman Rotors by Use

Rotor Max. rpm Max. g		Max. g	k Factor	No. of Tubes x Nominal Tube Volume (ml.) ¹	Nominal Rotor Capacity (mL)	For Use in Instruments Classified:	Page		
Trilling line (examp			THE WASH						
The state of the s	80,000	602,000	28	8 x 13.5	108	FGHR	3		
Type 80 Ti	000,08	510,000	8	8 x 5.1	40.8	HR	13		
VTi 80	75,000	502,000	35	8 x 13.5	108	F ² G ³ HR	3		
Type 75 Ti	70,000	450,000	36	12 x 13.5	162	F ² G ³ HR	4		
Type 70.1 Ti	65.000	404,000	10	8 x 5.1	40.8	HR	13		
VTi 65	65,000	400,700	13	8 x 13.5	108	HR	14		
VTi 65.1	65,000	416,000	10	16 x 5.1	81.6	HR	14		
VTI 65.2	65,000	368,000	45	8 x 13.5	108	ABCDFGHQR	5		
Type 65	50,000	226,000	78	12 x 13.5	162	BCDFGHQR	7 2011 - 11848		
Type 50 Ti			AND THE PROPERTY OF THE PROPERTY OF THE						
THE STATE OF THE PROPERTY OF THE PARTY OF TH			01111111111111111111111111111111111111	8 x 38.5	308	G ³ HR	4		
Type 70 Ti	70,000	504,000	63	8 x 38.5	308	BF ² G ³ HR	.5		
Type 60 Ti	60,000	362,000	64	10 x 38.5	385	GHR	6		
Type 55.2 Ti	55,000	340,000	69	12 x 38.5	462	FGHR	6		
Type 50.2 Ti	50,000	302,000	36	8 x 39	312	HR	15		
VTi 50	50,000	242,000	133	6 x 94	564	FGHQR	8		
Type 45 Ti	45,000	235,000	133	8 x 38.5	308	HR	9		
Type 42.1	42,000	195,000	225	6 x 94	564	HR	10		
Type 35	35,000	143,000	223 		The state of the s				
anning mangant	organically wroter a			10 (5	1 117	BCDFGHQR	7		
Type 50.3 Ti	50,000	223,000	49	18 x 6.5	16.5	GHR	9		
Type 42.2 Ti	42.000	223,000	9	72 x 230 µl	100	CDFGHR	11		
Type 25	25,000	92,500	62	100 x 1			YET WAS		
erancis de Con	Tellining bird	amprofessor				ABCDFGHQR	8		
Type 50	50,000	196,000	65	10 x 10	100	ABCDFGHQR	10		
Type 40	40,000	145,000	122	12 x 13.5	162	HR HR	11		
Type 30	30,000	106,000	213	12 x 38.5	462				
THE STATE OF THE S	rentratime ear	dar Antalesi	nyohiintyer:				12		
Type 21	21,000	60,000	402	10 x 94	940	HR	12		
Type 19	19,000	53,900	951	6 x 250	1500	HR	MAKAN AM		
		SAMMENT	ithraigh an						
SW 65 Ti	65,000	421,000	46	· 3 x 5.0	15	BCDFGHQR	15		
SW 60 Ti	60,000	485,000	45	6 x 4.4	26.4	GHR	16		
SW 55 Ti	55,000	368,000	48	6 x 5.0	30	BCDFGHQR	16		
SW 50.1	50,000	300,000	59	6 x 5.0	30	ABCDFGHQR	17		
	THE RESERVE OF THE PARTY OF THE		Varrankë katif		100 100				
		288,000	124	6 x 13.2	79.2	CDFGHR	17		
SW 41 Ti	41,000	285,000	137	6 x 14	84	GHR	18		
SW 40 Ti	40,000	150,000	276	6 x 17	102	CDFGHR	20		
SW 28.1	28,000		THE PROPERTY OF THE PROPERTY O						
se Rotors locality			120	6 x 8	48	BCDFGHR	19		
SW 30.1	30,000	124,000	138	6 x 20	120	BCDFGHR	18		
SW 30	30,000	124,000	138	6 x 38.5	231	CDFGHR	19		
SW 28	28,000	141,000	245	3 x 34	102	ABCDFGHQR	20		
SW 25.1	25,000	90,400	337						
a acontinuous (lavenni Zmet	HOURS BEING			Sing Bongs	For Use in			
Rotors	Max. rpm	Capacity		Typical Sample Volume (mL)	Size Range of Particles Separated (S)	Instruments Classified:	Page		
	22,000	102,000	430	>1000	>50	BCDFGH	22		
CF-32 Ti	32,000	256,000		20	<20	FGH	23		
Z-60	60,000	172,000		20-50	20-100	BCDFGHQ	24		
Ti-14	48,000	1 1/2,000	1 005	,		BCDFGHQ	25		

Smaller volume tubes may also be used with adapters and/or spacers. Check the rotor listing for more information.
 Class F, Model L2-50 and Model L3's only
 Class G, Model L3's only

M.IM-1294-2-DT

March 1993 J-TB-024F

Relative Centrifugal Fields (imes g) at $r_{ m max}$ for J Rotors in J2 Series Centrifuges (at Various Speeds)

BECKMAN

Entries in this table are calculated from the equation RCF = 1.12r (RPM/1000)² and are rounded to three significant digits. The centrifugal force at a given radius in a rotor is a function of run speed. Comparisons of forces between different rotors are made by comparing the rotors' RCFs. When rotational speed is selected so that identical samples are subjected to the same RCF in two different rotors, the samples have then been subjected to the same maximum force.

																									er	Kronovani.
17 500 18 000 18 500 19 000 19 500 20 500 21 000	16 500 17 000	15 000 15 500	14 000 14 500	13 500	12 500	12 000	11 500	10 500	9 500	900	8 500	7 500	7 000	6 50 500	5 500	5000	4 500	4 000	3 500 	2 500	2000	1 500	38	-	RPM	
35 000 37 000 39 100 41 200 43 400 45 700 48 000 50 400	31 100 33 000	25 700 27 500	22 400 24 000	20 800	17 900	16 500	15 100	12 600	300	9 250	8 250	6 430 7 310	5 600	4 830	3 460	2 860	2310	1 830	1 030 400	714	457	257	1 2	3	JA-21 102	
37 000 39 200 41 400 43 700 46 000 48 400	32 900 35 000	27 200 29 100	25 400	22 000	18 900	17 400	16 000	13 300	5 6	9800	8740	6 800 7 740	5 930	5110	3 660	3 020	2 450	1 940	1 090 1 480	756	484	272	<u>.</u>	3	JA-20	
33 600 35 600 37 600 39 600 41 700 43 900	29 900 31 700	24 700 26 400 28 100	23 100	200	17 200 18 600	15 800	14 500	12100	1 99	8 890	7 930	6 170 7 020	5 380	4 640	3 320	2740	2 220	1 760	1 990 1 340	686	439	247	110	27	JA-20.1 98*	
39 500 41 700 44 100 46 500 49 000 51 500	35 100 37 200	33 900 33 900 36 900	27 100	23 500	22 20 20 100 20 100	18 600	17 000	14 200	3 2	1040	9310	7 250 8 240	6310	5 440	3 900 4 640	3 220	2610	2060	1 580	805	515	290	1 8 %	સુ	JA 20.1	
27 800 29 400 31 000 32 700 34 500 36 300	24 700 26 200	22 23 22 40 20 00 20 00	19 100	16 500	14 200 15 300	13 100	12 00 00 00 00 00 00 00 00 00 00 00 00 00	1 0 0 0 0 0 0	0 10	7 350 300	6 550	5 100 5 810	4 450	3 830	2740 3 <i>2</i> 70	2 270	1 840	1 450	1 110	567	363	204	9 5	ડ્ડ	BT [†]	
30 500 32 300 34 100 36 000 37 900 39 900	27 100 28 800	22 400 23 900 25 500	21 000	18 200	15 600 16 800	14 400	13 200	11 00	1000	8070	7 200	5 61 0 6 380	4 880	4 210	3 500 500	2 490	2 020	1 590	1 220	623	399	224	<u>ā</u> 8	પ્ર	JCF-Z 89 [†]	
31 900 33 700 35 600 37 600 39 600 41 700	28 400 30 100	23 400 25 000 26 700	21 900	19 20 20 20 20 20 20 20 20 20 20 20 20 20	16 300 17 600	15 000	13 800	11 500	10 400	8 440 640	7 530	5 860 6 670	5 100	4 400	3 150 3 750	2 600	2110	1 670	1 280	3	417	234	ğ 2	ઝ	93 93	PC PC
45 300 47 900	40 200 42 700	33 300 35 500 37 800	31 100	26 26 26 26 26 26 26 26 26 26 26 26 26 2	23 100 25 000	21 300	19 600	16 300	14 800	3300	10700	9 460	7 240	6 250	4 470 5 320	3 700	2 990	2 370	1 810	924	591	333	148	37	JA-18 132	ROTOR NAME AND I _{max} IN MILLIMETERS
38 400 40 600	34 200 36 300	28 200 30 100 32 100	26 400	22 22 22 900	19 600 21 200	18 100	16 600	13800	12500	11 300	900	7 060 8 030	6150	5 300	3 790 4 520	3140	2 540	2010	1 540		502	282	125	31	JA18.1	AND /may
39 800 42 100	35 400 37 500	31 200 33 300	27 300	23 700 25 500	22 300 22 000	18 700	17 200	14 300 15 700	13 000	11 700	9390	7 310 8 310	6 370	5 490	4 680	3 250	2 630	2 0 2 0 3 0 3 0 6 0	1 590	1 170	2 2	292 283	138	32	JA-18-1 116 [‡]	IN MILLIN
	37 500 39 800	33 100 35 300	29 000	25 100 27 000	21 500 23 300	19 800	18 200	15 200 16 700	13 800	12 400	1 9950	8 820	6 750	5 820	4 960	3 440	2 790	2 550	1 690	1 240	9 5	310	138	34	JA-17 123	ETERS
1-8 •• • • • • • • • • • • • • • • • • •	† • In			28 28 100	24 000 25 900	22 18	20 300	16 900 18 600	15 300	13 800	13 13	9 820	7 520		5 520	3 840	3110	2840	1 880	380	07.0	345	153	3 8	JA-14 137	
81 mm; with all other JCF-Z cores r_{max} is 89 mm. † The JA-18.1 rotor can spin tubes at two different angles: 45° and 25°. The 45° angle configuration gives an r_{max} of 116 mm. The 25° configuration gives an r_{max} of 112 mm. ** g-force at elutriation boundary.	 Inner and outer rows. † ICE-2 with small nellet core has an rmar of 				26 500 26 500	22 600	20 700	17 300 19 000	15 700	14 200 14 200	1300	10 000	2000	6 620	5 640	3 920	3 180	2900	1 920	1 410	9 0	953 7	157	39	JS-13 1 140	
Il other JCI ottor can spi ottor can spi ot 25°. The of 116 mm. of 112 mm. riation bou	er rows. nall nellet c					23 200	21 300	17 800 19 500	16 100	14 600	13 100	10 300	2070	6810	5 810	4 030	3 270	2 980	1 980	1 450	1 010	6 363 5 3	61	40	144 144	
Text Cores rn n tubes at t the table and the table at the table and the table at the table and table at the table at the table and table at table a	ore has an /								17 700	16 000	14 300	11 300	0000	7 480	6 370	5 4 420 5 350	3 580	3 270	2 170	1 590	110	708 808	177	44	JA-10 158	
nax is 89 mn wo differer minguration ifiguration	n _{ar} of											Š	3 8	7 810	6 650	л 4 л 620	3740	3 420	2 260 2 260	2 660	1 68	730	185	46	165	5
n.																		4 220	2 2 8 8 8 8 8 8	2060	1 430	910	228	57	204.5 4.5 204.5	
															3 470	2910	1 950	1 780	1 180	870	8 8	38.7	 2 %	24	86**	ה מ

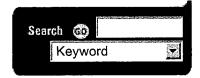


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EXHIBIT 3



Named Top Web Site in Industry by BtoB Magazine for 3rd Straight Year
shopping cart 胃 log on/register quick order form favorites catalog



Return to Company Boutique

Brinkmann Centrifuges



Eppendorf® Microcentrifuge Model 5417C

PRODUCT DESCRIPTION

- Variable-speed motor spins up to 14,000rpm/20,800 x g
- For added safety, a sensor automatically displays maximum speed for the installed rotor

At only 13 inches in width this model is perfectly suited for the crowded laboratory or the space limited cold room. The maintenance-free, brushless motor is capable of producing the speed and force needed for most every microcentrifuge tube application. Speed setting and display is in either rpm or rcf increments. The adjustable-speed "momentary" button allows for quick spins. The unit operates at a quiet level of less than 60dB. Soft Start/Stop function protects delicate samples. For user safety, an automatic rotor detection system senses the rotor and indicates maximum permissible speed. RS-232 interface for computer control or data recording.

Use with any of four interchangeable, autoclavable rotors with lids. Rotors not included. Browse the Centrifuge section for info on rotors and other accessories.



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Back to Top of Page

1 of 7 3/19/2002 10:04





Eppendorf® Refrigerated Microcentrifuge Model 5417R

PRODUCT DESCRIPTION

- Temperature control from -9 to 40°C
- Large LED display and membrane keypad

Compact microcentrifuge is ideal anywhere space is limited (only 13 inches wide). Unit accelerates to 14,000 rpm and 20,800 x g in less than 15 seconds. Brushless motor is whisper quiet, and internal fan keeps unit cool. Timer control accepts settings up to 99 minutes and includes hold function.

All functions are microprocessor controlled for precise, reproducible results. RS-232 interface lets you link control to your computer. Soft Start/Stop function gently handles fragile samples, loose pellets or microcentrifuge filter tubes.

The 5417R offers precise temperature control to -9°C. Environmentally friendly, CFC-free R-134a refrigerant. "Fast Cool" function brings rotor bowl temperature down from ambient to 4°C in less than 20 minutes.

Safety features include the fully shielded rotor bowl and dual lid locks to provide maximum protection to the end user. In addition, all rotors are autoclavable and supplied with a cover to reduce or contain hazardous aerosols. Meets IEC 1010 safety standards.

Accepts the four autoclavable quick-release rotors listed in table (on the previous page) Rotors come with lids to minimize air turbulence and provide spill control. Microprocessor automatically senses which rotor is installed and displays the rotor's maximum allowable speed. Order rotors separately. Order adapters to accept other tube sizes. Browse the Centrifuge section for rotors and accessories.



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Back to Top of Page

two interchangeable rotors, ordered seperately. Two year warranty. Model 5415D accepts two intechangeable rotors with easy, snap-on polypropylene (PP) lids. The 24-place rotor can also be used with the aerosol-tight lid for protection against harmful aerosols. The see-through polycarbonate (PC) lid allows the rotor to be viewed for possible spills. All rotors are autoclavable at 121°C. Rotors are sold seperately.

SPECIFICATIONS

Max. Speed 13,200rpm

Max. RCF 16,110 x g

Rotor Capacity 24 x 1:5-2.0ml tubes

36 x 500µL tubes

Timer 30 seconds to 99 minutes

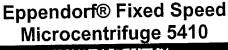
Dimensions 9"H x 12"D x 9"W

Weight 17lbs.



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Back to Top of Page

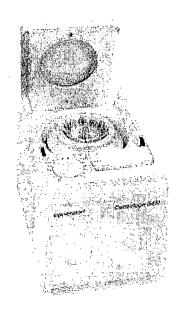


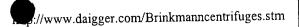
PRODUCT DESCRIPTION

- · Covered rotor is included
- Compact design is practical for benchtop use or in the cold room

An outstanding value! Comes complete with autoclavable 12-place 1.5-2.0mL rotor with cover-cover minimizes air turbulence and provides spill control. Accommodates 0.25 to 0.4mL microcentrifuge tubes with available adapters and up to 4 Aerosol-Tight Capsules.

"Short" function lets you perform quick reproducible runs. Rotary timer lets you perform timed runs up to 30 minutes. "Hold" function allows you to spin even longer. Quiet motor (less than 60dB) spins at 14,000 rpm and 12,800 x g Maximum speed is reached in only 10





seconds. Meets or exceeds ISO 9001 quality standards, and conforms to International Safety Standard IEC 1010.

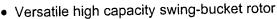


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Back to Top of Page

Eppendorf® 5810/5810R High Capacity Centrifuges

PRODUCT DESCRIPTION



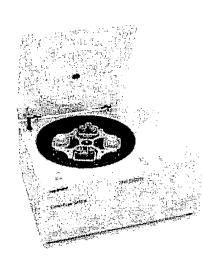
- Spin tubes from 0.25 to 250mL
- Rotor design allows high throughput
- Use with modular adapters to spin up to 36 x 15mL or 12 x 50mL or 16 microplates with the same rotor Combining capacity and comfort.

One of the most innovative centrifuges in the 1000mL class. The 5810 and its refrigerated counterpart the 5810R utilize a high capacity swing-bucket rotor with four 250mL buckets. Choose from a variety of easy to stack modular adapters that allow you to customize for both the length and diameter of the tubes specific to your application. Available microplate buckets hold up to 16 x 96-well plates. For more dedicated applications the 5810/5810R can be used with the any of five rotors listed on the opposite page for the 5804/5804R. User-friendliness abounds with such great features as ergonomic access height for easy loading, motorized lid latch for effortless opening and a low noise level for a quieter laboratory environment. Rotors not included.

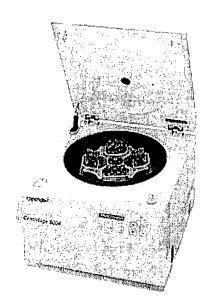


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Back to Top of Page







Eppendorf® Multipurpose Centrifuge models 5804/5804R

PRODUCT DESCRIPTION

- Easily accepts tubes from 0.25 to 100mL
- Flexibility of five interchangeable rotors with modular adapters
- Ergonomic, low-profile design

Centrifuge up to 16 x 15mL, 8 x 50 mL conical or 30 microcentrifuge tubes per run for a wide range of applications. Whether you're doing molecular biology, clinical chemistry or hematology, by ordering any of the five available rotor types (sold separately) combined with a wide variety of adjustable length adapters (also sold separately), you have a system built by you for you.

Performance features you've come to expect from the industry leader

Variable speed, maintenance-free motor spins up to 14,000 rpm (20,800 x g). Time, temperature, speed/g-force and radius values can be quickly entered on the easy-to read digital display. Automatic g-force conversion eliminates tedious calculations and ensures run accuracy. 34 user defined programs allow quick parameter entry and ensure reproducibility. Short spin feature allows momentary spins at adjustable speeds. 10 acceleration and braking rates can be set to protect sensitive samples.

Refrigerated model provides accurate temperature control with CFC-free refrigeration. Fast Cool function pre-cools chamber in as little as 15 minutes. Non-refrigerated model is ventilated and designed for cold room use if necessary.

Low profile body has only a 11 inch access height for easy sample loading. Automatic rotor recognition senses rotor type to set maximum allowable speed. Rotor imbalance cut-off prevents costly sample damage. Self diagnostics alert improper operating conditions and even expedite service if needed. Rotor not included. Browse the Centrifuge section for rotors and other accessories.



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Back to Top of Page





Eppendorf® Snap-Cap Microcentrifuge Tubes

PRODUCT DESCRIPTION

Safe-Lock tubes have positive-sealing cap lock for extra margin of safety, yet open easily with one hand. Flex-Tubes have flexibly attached caps that snap on tightly with one hand (not recommended for boiling). All polypropylene (PP) tubes are autoclavable to 121°C. All tubes have writing spot.



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